

**Changes to the Drawings:**

Applicant has a new drawing sheet incorporating newly added Figure 2.

**REMARKS:**

In this application claims 1-15 and 17-26 stand rejected. Claims 16-26 have been canceled in accordance with the Examiner's requirement. Currently claims 1-15 are currently amended, claims 16-29 are canceled without prejudice, and new claims 30 and 31 have been added. No new matter has been added. Applicant respectfully requests reconsideration based on the remarks and amendments herein.

**Objections to the Drawings:**

The drawings are objected to under 37 C.F.R. § 1.83(a). A new drawing sheet including newly added Figure 2 has been provided with this reply. Claim 27 has been canceled, and claim 1 has been extensively amended in this reply. Accordingly, the issues previously of concern to the examiner may now be moot. However, Applicants have nevertheless provided amendments to the drawings and supporting amendments to the specification in response to the objection expressed in the Office Action of September 19, 2007.

Applicant has reviewed the current claims and the drawings which now include FIG. 2, and respectfully contend that all features recited in the claims are shown in the drawings. Accordingly, Applicant respectfully requests reconsideration.

The Brief and Detailed description of the drawings have been suitably amended to reflect the addition of Figure 2 to the application in paragraphs [0011.1] and [0015.1], respectively. Figure 2 is fully supported by the application as originally filed, particularly on page 5 thereof. Likewise, the changes to the specification are fully supported in the application as originally filed.

**Changes to the Claims:**

Claims 1, 13, and 15 have been amended to more clearly define the present invention. While the preamble of claim 1 has been modified with respect to its earlier form for the sake of clarity, Applicant respectfully contends that the claims, as presently worded, maintain consonance with the restriction requirement of May 21, 2007, and the Election filed in response thereto on July 24, 2007.

Claims 3-12 and 14 have been amended to refer back simply to a method, as now recited in claim 1.

Claims 16-26 have been canceled in accordance with the Examiner's instructions as being directed to a non-elected invention. However, Applicant reserves the right pursue these claims and claims of related scope in one or more Divisional applications. Claims 27-29 have been canceled without prejudice. New claims 30-31 has been added to recite a particular embodiment of the present invention.

All changes to the claims are fully supported by the Application as filed. No new matter has been added.

**Best Mode Rejection under 35 U.S.C. § 112, First Paragraph:**

Claims 1-15 and 27-29 are rejected under 35 U.S.C. § 112, first paragraph, for lack of disclosure of the best mode. Claims 27-29 have been canceled. Moreover, claim 1 has been extensively amended in this amendment. However, Applicant below addresses the best mode rejection as best understood.

The Office Action recites "Evidence of concealment of the best mode is based upon 'a key that is a best pattern match of a data string of a data string means that the key has a maximum

number of the same digits as the data string". The Office action contends that "applicant could not convert his idea fully into implementing method." It is assumed that the word "count" as recited in the Office Action was intended to read as "could", and this interpretation has been incorporated into the quotation above from page 4 of the Office Action. Applicant respectfully contends that the outstanding best mode rejection is misapplied in this instance, based on the rule and analysis below.

The M.P.E.P. recites:

The examiner should assume that the best mode is disclosed in the application, *unless evidence is presented that is inconsistent with that assumption*. It is extremely rare that a best mode rejection properly would be made in ex parte prosecution. The information that is necessary to form the basis for a rejection based on the failure to set forth the best mode is rarely accessible to the examiner, but is generally uncovered during discovery procedures in interference, litigation, or other inter partes proceedings. M.P.E.P. § 2165.03 (emphasis added).

Applicant respectfully asserts that no concealment has occurred in this application. Moreover, Applicant respectfully notes that no evidence of such alleged concealment has been provided in the Office Action. The Office Action instead contends that there is a lack of relation between two possible embodiments of the invention, one in which the data string corresponds to a person's name, and another in which the data string corresponds to digits of a phone number. See Office Action, pages 3, last paragraph to page 4, first paragraph. However, nowhere the Office Action identify information describing what the "best mode" of the invention is, or allege

that such information was omitted from the specification.

Accordingly, Applicant contends that the evidentiary criterion marked in italics in the cited MPEP passage above is not met, and that the Examiner should accordingly assume that the best mode is disclosed in the specification.

More specifically, the M.P.E.P. presents a two prong test to evaluate a rejection based on rejection for lack of best mode.

A) determine whether , at the time the application was filed, the inventor knew of a mode of practicing the invention that the inventor considered to be better than any other; and

B) [determining whether] the disclosure is adequate to enable one skilled in the art to practice the best mode.  
M.P.E.P. § 2165.03.

The M.P.E.P. recites:

The first component is a subjective inquiry because it focuses on the inventor's state of mind at the time the application was filed. Unless the examiner has evidence that the inventors had information in their possession (1)at the time the application was filed (2)that a mode was considered to be better than any others by the inventors, there is no reason to address the second component and there is no proper basis for a best mode rejection.  
M.P.E.P. § 2165.03 (emphasis added).

The Office Action does not provide any evidence that, at the time the application was filed, the inventor considered one mode to be superior to another. Accordingly, in accordance with the above-quoted rule from the M.P.E.P., Applicant contends that there is no proper basis for a best mode rejection in this application. Reconsideration is therefore respectfully

requested.

**Best Mode Rejection under 35 U.S.C. § 112, Second Paragraph:**

The above best mode rejection under 35 U.S.C. § 112, first paragraph is substantially repeated in paragraph 8 of the office action, but is entered under 35 U.S.C. § 112, second paragraph. Applicant respectfully contends that the above section pertaining to the best mode rejection, under 35 U.S.C. § 112 first paragraph, constitutes a completely reply to the best mode rejection. Accordingly, those remarks will not be repeated in response to the rejection identified in paragraph 8 of the Office Action.

**Rejection under 35 U.S.C. 112, Second Paragraph:**

Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements. Claim 1 has been amended in this paper, and is believed to be definite under 35 U.S.C. § 112, second paragraph.

**Rejection under 35 U.S.C. § 101:**

Claims 1-15 and 27-29 are rejected under 35 U.S.C. § 101 for not being directed to statutory subject matter. Claims 27-29 have been canceled without prejudice and are therefore not considered further herein. Claims 1-15 are rejected for being directed purely to a mathematical formula and not producing useful, concrete, and tangible results. For the reasons stated below, Applicants contend that claims 1-15 are statutory under 35 U.S.C. § 101.

Unpatentable mathematical algorithms are identifiable by showing that they are merely abstract ideas constituting disembodied concepts or truths that are not useful. *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* 149 F.3d 1368, 1373 (Fed. Cir. 1998). Applicant respectfully asserts that this does not apply to the present claims. The present claims relate to a method and system for associating keys of varying length with records, using an index, which may be beneficially employed to generate desired records more efficiently than is possible in the prior art.

The system and method recite indexing instructions which include steps for generating a final result quickly where a record is specified at one of the initial levels of the index, and steps for further navigating the index where a given level of the index does not specify a record. The foregoing does not constitute an abstract idea, but rather a tangible and concrete mechanism for embedding a set of keys, to be compared with queries, into an indexing system or method.

Various possible useful, concrete, and tangible results are obtained in various embodiments of the claimed invention, including but not limited to routing a telephone call to a destination in accordance with one or more records returned by the index of the claimed system and method herein. Providing a useful, concrete, and tangible result in the manner described renders the claims statutory. *Id.* at 1375. Accordingly, reconsideration is respectfully requested.

**Rejection under 35 U.S.C. § 101:**

Claims 27-29 are rejected under 35 U.S.C. § 112, first paragraph, for being directed to data structures. Claims 27-29

have been canceled without prejudice in this paper. Accordingly, the rejection thereof is considered moot. Reconsideration is respectfully requested.

**Rejection under 35 U.S.C. § 102:**

Claims 1-15 are rejected under 35 U.S.C. § 102(e) as being anticipated by Yau (U.S. Patent 6,741,688, hereafter Yau).

Claim 1 recites the limitation:

"for each element of each said level of said index . . . associating an indexing instruction therewith selected from the group of indexing instructions consisting of:

i) moving on to check a next level without specifying a record; ii) specifying one or more records and also moving on to check a next level; iii) specifying one or more records and not moving on to check a next level;"

Yau does not disclose the above features. Specifically Yau does not disclose associating an instruction, that may include specifying one or more records (or moving to another level), with an element of each level of an index, where each level corresponds to a digit of a key. More concisely, no such level-by-level (or, correspondingly, digit-by-digit) provision of records or index navigation is disclosed in Yau. Instead, as discussed below, Yau is directed to comparing entire phone numbers or entire sub-fields of phone numbers to the entirety of a target data string all at once, and generating a single comparison result thereby.

Yau discloses using a first stage in which digit positions of interest in a telephone number are identified, and a second stage in which all of the digit positions of interest are



compared to a target. Yau, col. 2, lines 15-20.

We now consider the target database 40 of Yau and the methods of data string comparison conducted in Yau. Yau discloses that target database 40 includes one or more address or telephone number targets 54 that are preferably as wide as any received telephone number is long. Col. 4, lines 5-7. When a match occurs between a telephone number and a selected target from target database 40, actions may be taken based on the results. Col. 4, lines 37-49. However, Yau does not disclose associating instructions of any kind with each level, or otherwise stated, each digit or "token", of the target data strings stored in target database 40. More specifically, Yau does not disclose returning records or proceeding to a succeeding digit of a target data string within database 40, based on a comparison result of an individual telephone number digit with an individual digit of a target. Thus, the claim 1 step of "for each element . . . having a value matching the value of the key digit corresponding to that level, associating an index instruction therewith . . ." is not disclosed in Yau.

Moreover, the methods of comparison of Yau do not disclose any way of using such level-specific, or digit-specific instructions, even if such digit-specific instructions did in fact exist in database 40. Yau merely discloses that the ANDed result of the masking step is compared with one or more targets. Col. 4, lines 17-19. Yau discloses only a single result of comparing all digits of a telephone number to all digits of a target. Col. 4, lines 15-21. Yau does not remotely suggest that an instruction is returned based on a comparison result of an individual telephone number digit with an individual target data string digit. Yau therefore teaches away from the invention of claim 1.

In the following the respective ways of handling of two target phone numbers by Yau and the present invention are compared.

Yau discloses an example in which it is desired to perform separate actions on two respective target telephone numbers: (a) 1-976-123-4567 and (b) 1-976-123-4568. See col. 4, lines 63-64. In a first step, a received telephone number is ANDed with a mask to leave the sub-field of interest. See Col. 4, lines 62-63. After applying the mask logic, the pattern match logic is applied, and the query telephone number is compared to the two target telephone numbers. If the query telephone matches either target (a) or target (b), as may be determined in separate comparison operations, the call may be screened as desired. Col. 5, lines 2-4.

We now consider how the an index according to the present invention would associate the above keys (target telephone numbers) with their respective records, with reference to the diagram of FIG. 1. Reference is made in this section to the indexing instructions listed in claim 1. In brief, for each element value at each digit/level of the index, an instruction is provided which specifies moving on to a next level of the index, or not doing so; and returning a record, or not doing so. Again, the pertinent keys here are (a) 1-976-123-4567 and (b) 1-976-123-4568.

At level 1, the element value "1" would have instruction type (i) associated therewith, specifically: moving on to check a next level without specifying a record. All other element values of level 1 would get instruction (iv): not specifying a record and not moving on to check a next level (since there is no match for the first digit at these other element values). Instruction (i) referred to above, would be illustrated in FIG.

1 by extending a straight line from element value 1 of level 1 to level 2.

For the sake of brevity, instructions provided for the next nine digits will be discussed in summary form. After the digit "1", the next nine digits of the two keys "976-123-456" are the same. These next nine digits correspond to levels 2 through 10 of the index (the size of the index is considered to be of suitable size for this example). Thus, for levels 2 through 10 of the index, instruction (i) will again be provided for the appropriate element value of each level (the element value matching the value of the corresponding key digit). Specifically, the instruction will be to proceed to the next level of the index without providing an instruction. These could be illustrated in a figure by extending solid lines, to a succeeding index level, from the appropriate element values (976-123-456) at the respective levels of the index. Again, the element values at the respective levels not matching any digits would preferably receive instruction (iv).

At digit/level 11 (eleven), the keys diverge. Key (a) has an eleventh digit value of "7", and key (b) has an eleventh digit value of "8". Thus, at digit/level 11 of the index, element value 7 would receive instruction type "iii" (see claim 1), which includes specifying a record and not moving on to check a next level. In the case of key (a), the "record" would be a routing instruction to telephone number 1-976-123-4567. Element value 8 of digit/level 11 of the index would also instruction type "iii". In this case, the record returned would be a routing instruction to telephone number 1-976-123-4568.

It may be seen from the above that the index of the present invention operates differently from the target database 40 of Yau, and that the processing of a query for comparison to

targets/keys would also operate differently. In the given example, the index of the invention need not separately store each of the keys. Further, instructions were provided at each level of the index, not only after one entire data string was compared to another entire data string.

Accordingly, Yau does not teach the limitations of claim 1. Claims 1-15 are therefore patentable over Yau under 35 U.S.C. § 102(e).

**Response to the Intended Use Rejection:**

In the Office Action of September 19, 2007, the Examiner contended, in response to Applicants' arguments, that patentable weight would not be accorded to a recitation of the "intended use" of the invention. The Examiner recites the following language in its "intended use" rejection:

"a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim."

See Office Action of 1/22/07, pages 10-11.

Applicants note that the language quoted above is drawn from an Examiner argument in *Ex Parte Hervy A. Morris*, 1998 WL 1736155 (Bd. Pat. App. & Interf.). Significantly, in that case, the claim at issue was a device claim, and the limitation at issue was directed to an action that a portion of the structure could perform. A case relied upon by the Examiner (in the cited case) in making the above argument, which also concerned a method limitation in a device claim, indicates that it is improper to rely on a method

concept to distinguish a structural claim over the prior art. In *Re Otto*, 312 F.2d 937, 940; 136 USPQ 458, 459 (CCPA 1963) (emphasis added). Accordingly, it is clear that the quoted Office-Action language at issue, consistent with the legal authority on which it depends, pertains to *method limitations* in *apparatus claims*. Thus, Applicants respectfully contend that the stated restrictions on patentability are wholly inapplicable to the method claims presented in this application. Thus, based on the foregoing, claims 1-15 are allowable.

**The New Claims:**

New claims 30 and 31 have been added which are believed to be allowable for many of the same reasons stated above in connection with claims 1-15.

**Conclusion:**

Based on the above amendments and remarks, the Applicant contends that all claims are allowable and respectfully request that the instant application be passed to issue. The Examiner is invited to call the below-listed attorney to resolve any outstanding matters. It is believed that no fees are due. However, the Commissioner is hereby authorized to deduct any fees believed due from, or credit any overpayment to, our Deposit Account No. 11-0223.

Respectfully submitted,

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